American Society for Testing Materials BULLETIN

ISSUED BI MONTHLY

A Preview of the Thirty-Sixth Annual Meeting with a Summary Program

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Successful Regional Meeting in New York

Important Actions at Group Committee Meetings

New Standards Approved for Publication

March, 1933

ENGINEERS' CLUB BUILDING
1315 SPRUCE ST., PHILADELPHIA

Main facade of the Administration Building, Century of Progress Exposition. This building, first exposition structure to be completed, was designed by the three Chicago members of the World's Fair Architectural Commission — Edward H. Bennett, Hubert Burnham and John A. Holabird.

Tentative Summary of Program

THIRTY-SIXTH ANNUAL MEETING

American Society for Testing Materials

The Stevens, Chicago, June 26-30

MONDAY June 26	TUESDAY June 27	WEDNESDAY June 28	THURSDAY June 29	FRIDAY June 30
Joint Session with A.F.A. — Symposium on Cast Iron	Steel	E N G I N E E R S	Fatigue of Metals	Non-Ferrous Metals
Rubber	Clay Pipe		Testing	Metallography
Textiles	Refractories		Road Materials	Cement
Timber	Brick		Waterproofing Materials	Gypsum
Cast Iron	Edgar Marburg Lecture "Crystalline Structure in Relation to Failure of Metals Especially by Fatigue," by Dr. Herbert John Gough, National Physical Laboratory, England.		Petroleum Products	Concrete
Wrought Iron			Corrosion of Metals	Joint Sessions with Econometric Society and A.S.M.E., Palmer House
High-Temperature Metals			Presentation of Data	
Paints			Mortar	
Coal		Combined Banquet, Hotel Stevens	Masonry Materials	
Administrative Committees				
Presidential Address				

American Society for Testing Materials

BULLETIN

ENGINEERS' CLUB BUILDING 1315 SPRUCE STREET PHILADELPHIA, PA.

NUMBER 61 MARCH 31, 1933

Plans for Thirty-Sixth Annual Meeting Taking Definite Form

Interesting Technical Program and Unusual Events to Attract Members to Chicago, Week of June 26

ALMOST interesting technical program is rapidly rounding into shape for the Thirty-sixth Annual Meeting which will be held at The Stevens, Chicago, June 26–30. In addition there are many unusual events which are scheduled for Chicago during the week of the annual meeting. Most of these are intimately connected with A Century of Progress Fair which opens on June 1. The Chicago District Committee, headed by Mr. H. G. Farmer, Technical Service Director, Universal Atlas Cement Corp., has been working hard not only in assisting the General Program Committee of the societies which are to meet during Engineering Week in their several plans for Engineers' Day, Wednesday, June 28, but especially in fitting the several features of the A.S.T.M. meeting into the general plans in the best possible way.

Engineers' Day

Upwards of twenty national societies will hold meetings during Engineering Week. These include the four Founder Societies and other national technical and engineering groups. (A list appeared in the December BULLETIN.) Three societies, in addition to the A.S.T.M., will have headquarters in The Stevens, namely, the American Institute of Mining and Metallurgical Engineers, the Society of Industrial Engineers, and the Society for the Promotion of Engineering Education. Other groups may schedule one or more of their meetings in this hotel also.

Because of the probable unprecedented demand for hotel accommodations during Engineering Week, members are urged to promptly return the enclosed room reservation card to The Stevens.

It can be seen that the many meetings being scheduled will bring to Chicago probably the greatest number of professional engineers ever gathered before in one city. They will be attracted not only by society meetings, but especially by the many features of interest to technical and scientific men which are included in the Fair. It is impossible to convey in this BULLETIN an adequate description of the Fair. However, a special article on the Applied Science and Industry Division begins on page 3. It is an attempt to give the members a general picture of this one phase.

The societies which are to meet are cooperating in the plans for Engineers' Day on Wednesday. Practically no society meetings will be held then. All activities in the morning and afternoon will be at the Fair grounds. Preliminary plans call for an assembly in the morning at which short addresses will be given by prominent Americans, with the remainder of the day probably reserved for trips to points of interest and exhibits. Many of the exhibitors plan special programs for this day.

In the evening a combined banquet will be held at The Stevens. Four thousand places can be made available and it is expected all will be taken. World renowned scientists and engineers will speak.

Annual Meeting Program

There will be some deviation in the arrangement of the program for the Society's 1933 Annual Meeting from the arrangement followed at previous meetings. No A.S.T.M. sessions will be scheduled for Wednesday. In order to have ample time for the presentation of the outstanding technical papers and the holding of the symposiums planned, sessions are scheduled to begin on Monday, June 26. Previously, Mondays have been reserved for committee meetings. This year, because the Society is participating in a joint meeting with the American Foundrymen's Association on Friday, June 23, and since a great number of committee members will be in Chicago over the week-end prior to the actual opening of the A.S.T.M. meeting, it is thought that a number of committees will want to schedule meetings during this time.

The Provisional Program for the meeting will appear in the April issue of the BULLETIN. It will include a complete list of the papers and reports to be given. A summary of the Provisional Program is given on the inside front cover of this issue.

The Symposium on Cast Iron is to be sponsored jointly by the American Foundrymen's Association and the Society. The object is to provide the engineering profession with authoritative data, in concise form, on the properties of cast iron produced by present methods of production. The data and information in the Symposium will cover the general engineering properties, metallurgy, physical properties, classification and specifications, design, machineability, and wear, corrosion, heat treatment, welding, etc.

The technical papers which have been offered and accepted for the meeting promise to be very interesting ones. Several of the papers involve divisions of the metals field—steel, wire, corrosion, aluminum, etc. There are a number which deal with problems on cement, concrete and brick. Of

special interest to this group will be several papers in connection with work on the Hoover Dam. Various papers are scheduled which can be classified under the heading "Testing and Testing Apparatus." This class of papers is always very interesting and this year will be no exception to the rule. All members of the Society will find some of the papers of special interest. Synopses of the papers will be given in the Provisional Program.

Preprints of Papers and Reports

Preprints of papers and reports will be available to the members in advance of the meeting and will be distributed in the customary way. Each member will receive a preprint request blank with the April BULLETIN on which he may indicate those papers and reports he wishes to receive. Preprints will be sent only to those members who request them.

Second Exhibit of Testing Apparatus and Related Equipment

The Second Exhibit of Testing Apparatus and Related Equipment is to be held at The Stevens, during Engineering Week. Plans will follow in general those in effect during the First Exhibit held in 1931. The scope of equipment which can be displayed has been broadened somewhat and the procedure for admission to the Exhibition Hall has been modified. All members of societies participating in Engineering Week will be admitted without charge and they will be permitted to bring any of their friends and associates with them into the Exhibit. The policy will admit everyone interested and exclude mere curiosity seekers.

Several of the companies who participated in the First Exhibit, and other companies, have applied for space, and it is believed the Second Exhibit will be a very interesting one. Despite the curtailment of research, there have been many new developments in the testing field and the displays of those companies which will take part should be very worthwhile ones.

Doctor Gough to be Marburg Lecturer

Dr. H. J. Gough, Superintendent of Engineering Division, National Physical Laboratory, England, is to present the annual Edgar Marburg Lecture. Doctor Gough has been invited to visit this country with the group of scientists and engineers from abroad who are to attend the Century of Progress Fair, through the courtesy of Section M (Engineering), American Association for the Advancement of Science. He has a distinguished record as a scientist and is especially renowned for his work in connection with the study of the strength of single crystals of metals. He is probably the leading investigator in the field of relation between atomic structure and practical strength of metals. Doctor Gough has chosen as the subject of the lecture: "Crystalline Structure in Relation to Failure of Metals, Especially by Fatigue." Further details will be given in the April BULLETIN.

Railroad Rates to be Low

Everything possible is being done not only to make annual meeting week a most interesting one, but also to make the trip to Chicago an economical one. Special reduced railroad rates have been obtained through cooperation of the Fair authorities and the railroad passenger associations for the duration of the Fair. In addition to this, there will be "extra special" rates for Engineering Week. Final rates have not yet been established, but they will be lower than the "fare and one-half return" which has been in force for previous meetings.

Hotel Rates and Reservations

The Stevens, where the annual meeting will be held is especially fitted for handling conventions and has ample meeting room and guest room facilities. The hotel is operated on the European plan and there are several dining rooms to meet the varying desires of the individual. Fixed price meals are served, and of course *à la carte* service is available in all the dining rooms.

The rates which will prevail during Engineering Week for room accommodations at The Stevens follow:

(*a*) Room with double bed and bath for one person, per day: $3.00, $3.50, $4.00, $5.00, $6.00, $7.00 and $8.00.
(*b*) Room with double bed and bath for two persons, per day: $4.50, $5.00, $6.00, $7.00, $8.00, $9.00 and $10.00.
(*c*) Room with twin beds and bath for two persons, per day: $6.00, $7.00, $8.00, $9.00, $10.00 and $15.00.
(*d*) Parlors connected with bedrooms, per day: $5.00, $8.00, $9.00, $10.00 and $15.00.

Attention of the members is called to the fact that there is a limited number of special rate rooms. Since there will be an unusual demand for rooms during Engineering Week, it is very desirable to place room reservations early. *That is why the usual hotel reservation card is enclosed with this Bulletin* instead of the next issue, as has been customary.

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Economists and Engineers to Meet in Chicago

A joint meeting of the Econometric Society, the American Society of Mechanical Engineers and the A.S.T.M. will be held in Chicago during Engineering Week. The two sessions of the meeting will be held at the Palmer House on Friday afternoon and evening, June 30.

The general subject of the afternoon session is to be "Theoretical Economics in Engineering." This will involve discussion of the contributions of the mathematician and statistician to theoretical economies and the significance of such contributions from the engineers' viewpoint. Among the prominent engineer-scientists who will take part in this section of the program are Dr. S. Karrer, Director of Research, Consolidated Gas Co., Baltimore, Dr. L. O. Grondahl, Director of Research, Union Switch and Signal Co., Dr. C. F. Roos, Secretary, Econometric Society, Dr. R. W. Burgess, Chief Statistician, Western Electric Co., and Prof. D. S. Kimball, Dean, College of Engineering, Cornell University.

The evening session will be devoted to a discussion of "Fundamental Problems of Mutual Interest to Scientific Economists and Engineers." Taking part in the discussion will be Professor Joseph Schumpeter, Harvard University, Dr. F. B. Jewett, Vice President, American Telephone and Telegraph Co. and Dr. A. P. Flemming, Director of Research, Metropolitan-Vickers Electrical Co., England. It is hoped that this general discussion will give a better picture of what the social scientist needs to know about the present and potential possibilities of engineering developments and in turn what the research and development engineer interested in raising the standards of living needs to know about present and potential possibilities of theoretical quantitative economics if the social and economic values of their contributions are to be fully achieved.

All members of the Society and others interested in the general subjects of this joint meeting are invited to attend. W. A. Shewhart, Research Engineer, Bell Telephone Laboratories is chairman of the Committee on Arrangements.

Applied Science and Industry at Century of Progress Exposition

A General Description of This Part of the Fair, of Special Interest to Engineers and Technical Men

THE name "A Century of Progress" was selected as descriptive of the theme of the Exposition, which is to exhibit and portray to the peoples of the world the nature and significance of scientific discoveries and inventions based thereon, and the changes which the applications of scientific discoveries and inventions have wrought in industry and in living conditions during the past century.

Preparation

In order that the Exposition might have an appropriate scenario for its theme, the National Research Council was requested to appoint a Science Advisory Committee to prepare reports not only as to what should be portrayed by the Basic Science exhibits, but also what should be included in the exhibits to show the application of scientific discoveries in industry. These reports have served as a basic guide in seeking the participation of industry.

Nature of Exhibits

The Applied Science and Industry Exhibits will, in general, portray the application of scientific discoveries in the industry, features of historic interest, processes of manufacture, final products and the effects of the development of the industry on living conditions in cities and on farms. The work of engineers is shown as an integral part of the industrial exhibits instead of something segregated and set apart by itself. The exhibits are non-competitive and no prizes are awarded.

Grouping of Exhibits

The Applied Science and Industry Exhibits are arranged in six Grand Groups, as follows:

(1) The Travel and Transport Group includes exhibits of transportation by rail, highway, waterway and in the air together with exhibits by the associated industries such as the manufacturers of railway equipment and supplies, automotive equipment and supplies, etc. Travel features, both foreign and domestic, are stressed.

(2) The Electrical Group includes exhibits of the manufacture of electrical machines, the generation, distribution and utilization of electrical power, the applications of electricity in communication and the utilization of electricity in radio transmission.

(3) The Agricultural Group includes exhibits of food products, farm machinery and equipment, dairy products and poultry.

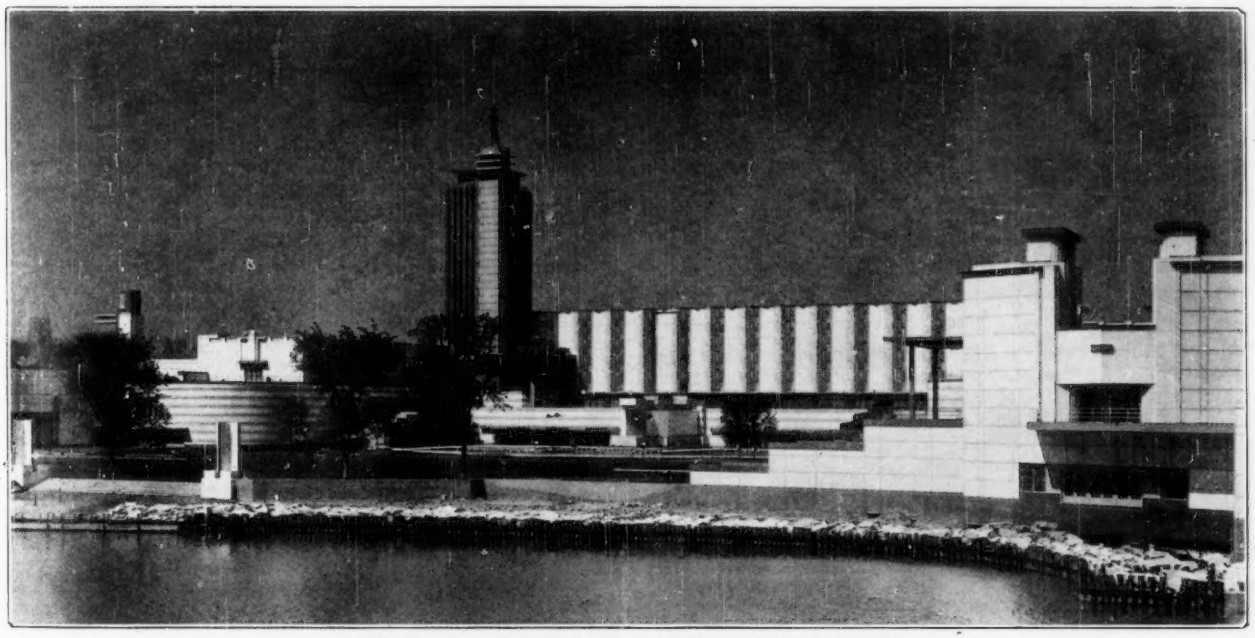
(4) The Medical and Chemical Group includes exhibits from manufacturers of articles which serve the medical professions and from the closely associated manufacturers of chemicals. These exhibits will be shown in the Hall of Science in proximity to the scientific exhibits in medicine and under the same roof with the other basic science exhibits.

(5) The General Exhibits Group includes the exhibits of the mineral industries and industrial engineering related thereto and the historical and process exhibits of the Graphic and Industrial Art Industries.

(6) While the above five groups provide a place for the exhibits of any industry, the need was felt for another group where the applications of any industry in the home and municipality could be more effectively portrayed in conjunction with the products of other industries. So a Home and Industrial Arts Group was created. Here new materials and methods of construction, the genius of interior decorators and home planners, the work of municipal and sanitary engineers and the products of those manufacturers who featured home furnishings and equipment will be on view.

Scope and Present Status

Three months prior to the opening date of the Exposition, the work of securing the participation of industry necessary to present the applied science and industry exhibits was more than 80 per cent completed. Industry will present to men of science and to all visitors a marvelous display of what research engineers and the officials of industry have done in applying the discoveries of men of science to develop industries and improve living conditions.



THE HALL OF SCIENCE, CENTURY OF PROGRESS

This huge structure will house a great many exhibits of special interest to technical men

Committees Hold Series of Successful Meetings in New York

Attendance and Work Accomplished Encouraging

THE 1933 Spring Group Meetings of Committees were held at the Hotel New Yorker in New York City from March 6 to 10. The total registration of 384 exceeded that of the meetings held in Cleveland last year. This was very encouraging in view of the banking crisis. Some few of the standing committees found it necessary to temporarily cancel their meetings and attendance at meetings of one or two committees was not up to normal.

The following committees participated in the group meetings:

A-1 on Steel
A-2 on Wrought Iron
A-3 on Cast Iron
A-5 on Corrosion of Iron and Steel
B-2 Sub VII on Methods of Chemical Analysis
B-3 Subs: VI on Atmospheric Corrosion
VII on Corrosion in Liquids
VIII on Galvanic and Electrolytic Corrosion
B-5 on Copper and Copper Alloys, Cast and Wrought
C-4 on Clay Pipe
C-5 on Fire Tests of Materials and Construction
C-9 on Concrete and Concrete Aggregates
C-10 on Hollow Masonry Building Units
D-2 on Petroleum Products and Lubricants
D-4 on Road and Paving Materials
D-8 on Bituminous Waterproofing and Roofing Materials
D-15 on Thermometers
E-1 Sections on: Tension Testing
Testing Thin Sheet Metals
Impact Testing
E-1 Subs: II on Plasticity, Consistency
III on Particle Size and Shape
IX on Presentation of Data
E-4 on Metallography
Joint Research Committee of A.S.M.E. and A.S.T.M. on Effect of Temperature on the Properties of Metals
Joint Committee on Investigation of Effect of Phosphorus and Sulfur in Steel
B-36 Subs II and III of Sectional Committee on Wrought-Iron and Wrought-Steel Pipe and Tubing
G-8 Sectional Committee on Zinc Coating of Iron and Steel
Z-23 Sectional Committee on Specifications for Sieves for Testing Purposes

These meetings enabled the committees to further many of their activities. Reports were received on many projects and problems which have been under way for the past year and, in some instances, over a period of several years. Plans for the institution of new work were perfected by several of the committees. Many new specifications and methods of tests completed by the committees at these meetings will be submitted to the Society in June. The committees also approved a number of tentative standards for advancement to standard and took action to revise existing standards and tentative standards.

The following brief account of the important features of committee work that received consideration and the actions taken at the New York meetings is significant of the amount of work accomplished and the success of the meetings:

Committee A-1 on Steel.—The Committee on Steel has completed the preparation of new specifications for alloy-steel castings for structural purposes. These specifications provide for three classes of castings: class A, full-annealed, class B, normalized, and class C, liquid quenched, for use in applications at mechanical stress where no high temperatures prevail. The completion of new specifications for heat-treated carbon-steel elliptical springs was also reported to the committee for publication as tentative.

A revision of the Standard Specifications for Lap-Welded and Seamless Steel Pipe for High-Temperature Service in the form of new tentative specifications was also acted upon by the committee. The revised specifications contain supplementary requirements of an optional nature for pipe intended for use at steam pressures of 400 lb. per sq. in. or over and temperatures up to 750° F. or other applications where a superior grade of pipe is required. Approval was also given to changes in the specifications for steels for high-temperature service, including those for castings, bolting material, flanges and pipe, covering in detail the use of materials at temperatures above and below 750° F. as well as proposed tables containing allowable pressure ratings at temperatures above and below 750° F.

The committee took action to recommend for advancement to standard in June a number of specifications under its jurisdiction, including tentative specifications for soft-steel track spikes, structural rivet steel, marine boiler steel plates, structural steel for ships, heat-treated carbon-steel helical springs, steel and iron boiler tubes, and open-hearth iron plates of flange quality.

The committee also approved revisions in the Standard Specifications for Steel Tie Plates, for Billet Steel and for Rail Steel Concrete Reinforcement Bars. Revisions affecting the size tolerances of commercial-quality hot-rolled bar steels and cold-finished bar steels and shafting in order to bring the specifications in line with standard practice were accepted.

Committee A-2 on Wrought Iron.—The Committee on Wrought Iron approved the adoption of the tentative revisions in the Specifications for Staybolt, Engine-Bolt and Extra-Refined Wrought-Iron Bars. In recommending the advancement of these revisions to standard, the committee took action to add requirements for flat bars $\frac{3}{16}$ in. in thickness and less. This class of material is being used for window sash and a demand for physical requirements has arisen. The requirements include a tensile strength of 47,000 lb. per sq. in., a yield point minimum of six-tenths ultimate strength, a minimum elongation of 22 per cent, with a minimum reduction of area of 30 per cent.

The revised definition of "double-refined iron" was approved for inclusion in the Standard Definitions of Terms Relating to Wrought-Iron Specifications. A new definition for "muck bar" has been prepared and will be adopted as standard this year. The definition reads: "Muck Bar.—A bar rolled from a squeezed bloom." Requirements for micrographic examination will also be included in all of the wrought iron and wrought-iron products specifications with the exception of those covering common bars.

Subcommittee IV on Plates, Shapes and Sheets presented a very interesting report concerning consideration that is being given to the preparation of new specifications for wrought-iron plates to bring them into better conformity with modern practice. It is expected that further announcements of this interesting work will be made in the annual committee report. The Subcommittee on Staybolt and Engine-Bolt Iron presented proposed specifications for wrought-iron rivet bars and rivets which will be issued as tentative. Progress was reported to the committee on the questionnaire recently circulated on quality standards covering wrought iron.

Committee A-3 on Cast Iron.—The Committee on Cast Iron will recommend the adoption as standard of the Tentative Specifications for Gray-Iron Castings (A 48 – 32 T). It will be recalled that these specifications were formulated by Committee A-3 with the cooperation of the Gray Iron Institute and were approved for publication as tentative at the June, 1932, meeting of the Society. These specifications which cover seven classes of castings ranging from 20,000 to 60,000 lb. per sq. in. tensile strength were drawn-up to supersede all individual specifications previously existing. The introduction of the specifications as tentative has already removed an element of uncertainty in buying and selling castings and the specifications have been well received by

(*Continued on Page 8*)

New York Regional Meeting

Symposium on Motor Lubricants—Industrial Applications of Particle Size Measurements

CIRCUMSTANCES seemed to conspire against the holding of the Spring Group Meetings of Committees and the New York Regional Meeting. The Depression itself seemed not enough, but just as the time approached for members to leave to attend the meeting, a general moratorium was declared which closed every bank in the country. But despite such inauspicious happenings, the meetings held during the week of March 6 and the Regional Meeting on March 8 in particular, were among the most successful yet held. The attendance at the afternoon and evening sessions in which the Symposium on Motor Lubricants was held was about 350, and interest was well sustained.

The meeting in the morning which was devoted to a discussion of the Industrial Applications of Particle Size Measurements was well attended and this in itself is ample proof of the importance of this subject.

At the dinner, which was a joint one with the Metropolitan Section, Society of Automotive Engineers, Dr. H. C. Dickinson, President, S.A.E., spoke on the subject "Why not Prosper?" There were about 150 present.

Symposium on Motor Lubricants

The Symposium on Motor Lubricants was sponsored by A.S.T.M. Committee D-2 on Petroleum Products and Lubricants which assigned the development of the program to a special committee consisting of J. G. Detwiler, Consulting Chemist, The Texas Company, Chairman; R. P. Anderson, Secretary, Division of Refining, American Petroleum Institute; H. C. Mougey, Chief Chemist, General Motors Research Laboratories; J. B. Rather, Chief Chemist, Socony-Vacuum Corp. C. H. Baxley, Chairman, Program Committee, Metropolitan Section, S.A.E., cooperated closely with this group. The Metropolitan Section of the Society of Automotive Engineers cooperated in making arrangements for the meeting.

At the opening session, President Cloyd M. Chapman introduced the chairmen of the sessions, T. C. Smith, American Telephone and Telegraph Co., and H. C. Mougey. Much of the success of the meetings and the spirited discussion elicited was due to their able direction. The papers presented in the Symposium are as follows:

Afternoon Session

1. Present Concepts of the Relation of A.S.T.M. Pour Test to Service Requirements of Oils—J. L. McCloud, Metallurgical Chemist, Ford Motor Co.
2. Viscosity of Automobile Crankcase Oils as Related to Service Requirements—E. W. Upham, Chief Metallurgist, Chrysler Corp.
3. Carbon Deposits in Gasoline Engines—W. A. Gruse, Senior Fellow, Mellon Institute of Industrial Research.
4. Service Changes in Crankcase Lubricating Oils—M. A. Dietrich, Graduate Student, Ohio State University.

Evening Session

1. Oil Consumption in Motor Car Engines—W. H. Graves, Chief Metallurgist, Packard Motor Car Co.
2. Factors in Engine Design Which Affect Oil Performance—A. L. Clayden, Research Engineer, Sun Oil Co.
3. Aircraft Engine Lubrication—Arthur Nutt, Vice-President in Charge of Engineering, Wright Aeronautical Corp.

It was expected that papers of the type presented would meet with some differences of opinion and there were many questions raised which resulted in very interesting sessions.

Preprints of the papers were available and were in wide demand. Members of the Society had previously been given an opportunity of obtaining copies. It is possible that all of the papers, together with the discussion, will be published in a single volume. Written discussion is solicited.

Regional Meeting Dinner

The Regional Meeting Dinner, held jointly with the Metropolitan Section of the Society of Automotive Engineers, was of an informal nature with but one speaker, Dr. H. C. Dickinson, Senior Scientist, U. S. Bureau of Standards, and President, Society of Automotive Engineers. He was introduced by F. M. Farmer, Past-President, A.S.T.M., and Vice-President and Chief Engineer, Electrical Testing Laboratories, who presided at the dinner. During his talk on the subject "Why not Prosper?" Doctor Dickinson dwelt briefly on the question of the present depression and he suggested a way out based on scientific analysis of the whole question. He demonstrated how the continued discharge of employees decreased purchasing power. As men are thrown out of work, purchasing power is decreased, not in proportion to the number out, but in a larger measure. Once a way is established of putting men back to work, purchasing power would automatically increase by a ratio of two or three to one. In the present situation, there is an adequate potential market, there are men only too willing to work and production facilities are available. Adequate credit is the missing factor. It is felt that the Government should provide this credit.

Symposium on Particle Size Measurements

The Symposium on Industrial Applications of Particle Size Measurements was held Wednesday morning. The program was sponsored by the Society's Committee on Particle Size and Shape under the direction of Dr. Lincoln T. Work, Assistant Professor of Chemical Engineering, Columbia University. Representatives from several industrial groups discussed the significance of particle size and the methods for its measurement in use in their respective industries. A list of the subjects and those leading the discussion follows:

Pigments	George Haslam, New Jersey Zinc Co. George Hiers, Chemist, National Lead Co.
Dusts	Prof. Theodore Hatch, School of Public Health, Harvard University.
Coal	R. M. Hardgrove, Fuller-Lehigh Co.
Cement	J. C. Pearson, Director of Research, Lehigh Portland Cement Co. J. R. Dwyer, Research Associate, U. S. Bureau of Standards.
Soils	H. H. Hatch, Springfield (Mass.) Water Works.
Road and Concrete Aggregates	D. A. Abrams, Consulting Engineer.
Abrasives, and New Developments in Sieves and Testing	A. A. Klein, Petrographer, Norton Co.
Proposed American Standard for Sieves	L. V. Judson, Physicist, U. S. Bureau of Standards.

The discussion on pigments involved the photomicrographic measurement of particle size, projection methods with the microscope, elutriation or sedimentation, and the estimation of specific surface by adsorption. The particle size problem of atmospheric dust was outlined and the question as to the sampling methods which are needed to secure true samples of dust in air was emphasized. The importance of standardizing sieve shaking procedures was particularly stressed with reference to pulverizing coal. A discussion of the importance of measuring grindability of coal was presented and a method for measuring it proposed.

(Concluded on Page 12)

AMERICAN SOCIETY FOR TESTING MATERIALS

BULLETIN

Issued Bi-Monthly

Engineers' Club Building, 1315 Spruce St., Philadelphia, Pa.

Number 61 March 31, 1933

Inspiration

IF any inspiration were needed, or any reassurance of the direct value to industry of the work of the Society, the recent meetings in New York City (described in other parts of this BULLETIN) provided just that. In times such as these every activity that costs money is carefully scrutinized and it must be amply justified. The Spring Group Committee Meetings and the Regional Meeting coming at a time when every bank was closed and the right of way given only to the very essentials, might well have been complete failures. Everyone was harried by doubts as to what might happen next and some travel orders were cancelled. It might have been expected that executives would consider it no time to attend meetings.

Remarkable then, that with all this, attendance at the committee meetings was with few exceptions up to average and in the case of some of the committees, meetings were better attended and more active than in several years. And the Regional Meeting was one of the most successful yet held! As a result, considerable impetus was given A.S.T.M. work.

One conclusion to be drawn from these meetings is that our work must go ahead. And real progress is being made. There is no denying that this Society has felt the effects of the depression. Losses in membership, many of them of long standing and therefore the more to be regretted, have resulted and in some other ways it was inevitable that support would falter momentarily. But A.S.T.M. has come through the trying period of the past few years in excellent condition from the standpoint of finance, membership and morale. The enthusiasm and work of the committees is undiminished and with new members being enrolled to help take the place of those who are forced to withdraw, our standardization and research activities will go ahead. Each member by maintaining his interest, by personally contacting and interesting others, can help. There is much inspiration to be drawn from the way our work has continued to move forward.

Help Uphold Quality Through Standardization

IN periods like the present, of depression and falling prices, when competition is exceedingly keen and consumers and producers alike are faced with the necessity of cutting costs wherever possible, then, if ever, the temptation arises to accomplish the required results even at the expense of lowering quality. The pressure on the technical organizations responsible for upholding quality both in manufacturing operations and in purchasing of materials may become so great as to seem almost irresistible. At such times, standard specifications and methods of test which have been expertly prepared and carry the authority of approval by the A.S.T.M. are of inestimable value in maintaining goods "built up to a standard instead of down to a price."

As engineers, we know the fallacies and dangers in lowering costs below the minimum which permits production of goods having adequate quality for the service intended. We know that safeguards must be established which permit evaluation of quality in terms of service life and which prevent the acceptance of materials which do not conform to the established safe limits.

The development of these safeguards is one of the aims of the important standardization work of our Society. Surely now is the time when we can least afford to relax in our efforts. It is a time when we must push forward strenuously. We must attend the meetings and contribute our best to the work in progress. We must interest new people in our Society and secure new members for both their technical and financial assistance and support. We must help uphold quality through standardization. Will you do your part?

Arthur W. Carpenter

Chairman, Committee on Membership.

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Society Appointments

G. C. D. Lenth, Consulting Engineer and Secretary, Clay Products Assn., has been appointed to the Chicago District Committee.

C. D. Mathews, Metallurgical Engineer, U. S. Pipe and Foundry Co., and E. J. Edwards, Engineer of Tests, American Locomotive Co., have been designated the A.S.T.M. representatives on the Joint Committee on Pig Iron Quality.

F. R. McMillan, Director of Research, Portland Cement Assn., has been appointed the American representative on the Study Commission on Density, Frost and Weather Resistance of Concrete of the International Association for Testing Materials.

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Discussion of Motor Lubricants Papers Solicited

Members of the Society and others who wish to prepare a discussion of any of the papers which comprise the Symposium on Motor Lubricants, held as part of the New York Regional Meeting on March 8, are requested to submit this as soon as possible. The Committee on Papers and Publications will receive written discussion until April 20. While there was extensive discussion of many points involved in the various papers at the meeting, there are undoubtedly some men who could not be present who wish to present further written discussion.

What Are You Worth to A. S.T.M.?

In the last issue of the BULLETIN, I raised the question of the value of A.S.T.M. to you. The natural counter question is—What are you worth to A.S.T.M.?

Are you one of those who carefully weigh the value of things—balance one value against another? If so, have you ever tried to strike a balance between the value of A.S.T.M. to you and your value to A.S.T.M., just to check on whether the balance is in your favor or against you?

If you were to do so, do you think you could look the Society square in the eye and say—"I do not owe you anything"? Try it, and if you find you owe anything, pay the debt with an "energy dollar" spent in helping along the work of the Society in one way or another.

Clayd M. Chapman

P. S.—One of the best ways is to get a new member.

P. P. S.—Between now and the June meeting is the best time to do it.

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More Student Prize Awards Established

The development of a plan whereby students in courses involving materials were to be awarded student memberships in the Society in recognition of meritorious work has been announced in various issues of the BULLETIN. The December issue in particular announced that several schools already had the plan in effect. Another university has been added to the list. Through the courtesy of Dr. H. A. Gardner, Chemical Engineer, The Institute of Paint and Varnish Research, ten students will be awarded membership prizes at Lehigh University. Students will be chosen from the Department of Chemistry and Chemical Engineering, and it has been stipulated that five of the awards will go to students who have done outstanding work in the Department of Inorganic Chemistry. Arrangements for choosing the winners will be made by Prof. H. M. Ullmann, Head of the Department of Chemistry and Chemical Engineering and J. S. Long, Professor of Inorganic Chemistry.

These prize awards are established in each case by an individual member of the Society who wishes to bring A.S.T.M. work more directly to the attention of students in engineering, chemistry and allied subjects. Student membership is intrinsically worth far more to a student than the annual dues of $1.50. The student receives a representative selection of A.S.T.M. standards, and the A.S.T.M. BULLETIN; he has the same opportunity as every other member of securing preprints of technical papers and committee reports and he can obtain A.S.T.M. publications at members' prices.

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Addresses Wanted

Anyone knowing the present address of either of the following members, whose last known addresses are listed below, is asked to notify the Secretary-Treasurer:

C. Royden Hoyt, Structural Engineer, 303 University Building, Denver, Colo.

L. E. McDermut, President, Illinois Slag and Ballast Co., 2817 E. 99th St., Chicago, Ill.

Financial Status of the Society

We remarked in the January BULLETIN that the Society completed 1932 with no material curtailment of service to its members and yet on the right side of the financial ledger. We give below some facts and figures about 1932 from the annual report of the auditors, which will appear in full in the report of the Executive Committee next June. Total receipts for 1932 were $114,479.20; total disbursements (with all current obligations paid) were $112,493.30; favorable balance, $1985.90. Although receipts were about $10,000 less than estimated at the beginning of the year, expenses were kept within receipts by various economies effected progressively throughout the year as conditions required. Moreover, a balance of $5200 from 1931 operations, set up as a reserve for use in 1932 if needed, was left untouched and is now available for 1933 operations. Economies referred to were effected principally in salaries, meetings expense, travel expense of staff and administrative committees, publications expense and miscellaneous printing. Reduced printing costs helped considerably. All technical publications were printed as usual.

In budgeting Society operations for 1933 the Executive Committee is proceeding on the sound principle of keeping disbursements within receipts. Since it is difficult in these uncertain times to estimate income with anything like the usual accuracy, the budget of receipts and disbursements has been set up on a tentative basis, subject to quarterly review and adjustment of expenses within actual income supplemented by such reserve funds as may safely and properly be used. Present plans call for publishing all the usual Society publications with as little curtailment in essentials as possible, and especially to publish all new and revised standards and tentative standards, including the 1933 edition of the triennial Book of A.S.T.M. Standards.

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Committee C-8 to Develop Standards for Insulating Refractories

At the recent meeting of Committee C-8 on Refractories held in Pittsburgh, it was definitely decided to begin work on the preparation of tests and specifications for high-temperature insulation and for insulating refractories.

The development of good refractory insulations is one of the most important recent achievements in the refractories field. There are now many new products which are reported to save operating costs especially in intermittently operated furnaces, by the use of insulation. In a good many cases these insulations are so refractory that they have been used to face the flame with or without a thin coating of refractory cement. The savings reported in many cases, for example in heat-treating furnaces, have been phenomenal.

Three proposed tests for use in specifications were submitted at the meeting. They cover (1) shrinkage under heat treatment; (2) transverse strength; (3) crushing strength.

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Past-President of International Association Dies

Word has been received of the sudden death in Paris on February 6 of Dr. Augustin Mesnager, member of the Institute of France. Doctor Mesnager served as President of the International Association for Testing Materials from 1927 until the First Congress of the New International Association was held in Zurich in 1931.

the industry during the past year. Once they have been adopted as standard, it is expected their value to the industry will be still further increased.

The committee is continuing its work on the determination of value of additional test bars and the method of making the bar. Members have been requested to submit data on the correlation of transverse and tension tests of the irons called for in the specifications.

For the past three years, Committee A-3 through its Subcommittee on Impact Testing has conducted a very extensive investigation on impact testing of cast iron. Based upon a careful appraisal of the comprehensive data resulting from this work, a report on this subject will be presented at the annual meeting of the Society in June.

The Committee on Cast Iron is cooperating in a Symposium on Cast Iron, sponsored jointly by the American Foundrymen's Association and the Society, which will be held at the annual meeting of the A.S.T.M. in June at Chicago. The Society through Committee A-3 is also cooperating with the American Foundrymen's Association in the holding of a Joint Symposium on Specifications and Testing of Cast Iron during the 1933 annual convention of the A.F.A. in Chicago. This Symposium will be held on the last day of the A.F.A. meeting, Friday, June 23, while the Symposium on Cast Iron at the A.S.T.M. meeting has been scheduled for the following Monday, June 26.

Committee A-5 on Corrosion of Iron and Steel.—The reports of the various subcommittees which were received at the meeting of Committee A-5 showed that substantial progress had been made during the year in the various corrosion test programs being carried on by the committee.

Inspections during the year of the exposure tests of bare (uncoated) steel and iron sheets both copper-bearing and non-copper-bearing under atmospheric conditions at Annapolis, Md., showed very few additional failures of these tests which have now been exposed for more than 16 years.

The Subcommittee on Total Immersion Tests reported that all of the 150 sheets of the No. 22 gage exposed in sea water since March, 1927, at Key West, Fla., and Portsmouth, N. H., had failed. Reports of progress were submitted by this committee on other immersion tests that are under way covering studies of plate materials and pipe and also rivets in sea and other water conditions prevalent in shipping service, including some tests in vessel hulls.

Results of inspections during the year of the atmospheric tests of hot-dipped galvanized sheets after seven years' exposure at Altoona, Pa.; Brunot Island, Pittsburgh, Pa.; State College, Pa.; Sandy Hook N. J.; and Key West, Fla., were reported by Subcommittee VIII on Field Tests of Metallic Coatings. This committee also has under way at these locations a comprehensive series of tests on metal products coated by various processes, such as sherardized, electro-galvanized, zinc-plated, cadmium-plated, parkerized, etc. Further inspections of these tests have been made and an extensive tabulation of the results of inspection after approximately four years' exposure will be included in the committee's annual report this year. A progress report on the corrosion test program of electro-plated coatings being carried on at five outdoor locations was also presented and discussed.

It was also reported that a satisfactory understanding had been reached concerning a program for tests on wire and wire products which it is expected will include various weights of hot-dipped coatings on wire exposed at a number of test locations.

Schedule of Committee Meetings

DATE	COMMITTEE	PLACE
March 28–30	D-1 on Preservative Coatings for Structural Materials	Washington, D. C.
March 29–30	D-17 on Naval Stores	Washington, D. C.
April 6–7	D-13 on Textile Materials	New York City
April 11	Executive Committee	Philadelphia
April	E-1 on Methods of Testing	Philadelphia

Committee B-3 on Corrosion of Non-Ferrous Metals and Alloys.—The Subcommittee on Atmospheric Corrosion has prepared an extensive report presenting the results of the atmospheric corrosion tests on 24 non-ferrous metals and alloys after an exposure of approximately one year. The corrosion tests are under way at nine test locations representing as many types of atmospheres. The amount of corrosion was measured by: (1) determining the change in weight on duplicate 9 by 12-in. plate specimen; (2) tension tests to find the change in tensile strength and percentage elongation; and (3) making a visual examination of the 9 by 12-in. plates from each of the nine test locations to determine the amount and character of the corrosion products on the surface of the specimens. While no conclusions will be drawn by the committee at this stage of the test program, the results of losses in weight and changes in tensile strength and elongation after an exposure of approximately one year will allow interesting comparisons with similar properties of the original materials and provide data for future study by the committee as the tests progress.

A full description of the metals and alloys being studied in this investigation including chemical analysis, microstructure, rolling treatment, etc., appeared in the 1932 annual report of Committee B-3.

The Subcommittee on Corrosion in Liquids reported that the tests in sulfuric acid are partially completed and figures are being tabulated in the laboratories. Tests in hydrochloric acid, salt and caustic soda will be begun soon.

The Subcommittee on Galvanic Corrosion announced that the test couples, which have been exposed on the field test racks for a year, were measured for loss in weight. This group is developing methods for removing corrosion products which is essential if accurate weight-loss measurements are to be made.

Committee B-5 on Copper and Copper Alloys.—The Subcommittee on Wrought Metals and Alloys has appointed a special sub-committee to give consideration to the formulation of specifications covering the high-strength silicon-copper alloys.

The committee approved revisions in the present standard specifications for brass pipe to cover Muntz metal, high brass, Admiralty metal and red brass for use in the fabrication of pipe suitable for use in plumbing, boiler feed lines, etc. Favorable action was also taken to revise the standard specifications for copper plates for locomotive fireboxes, copper bars for locomotive staybolts, and copper and brass boiler tubing and pipe, to require a minimum copper content requirement of 99.90 per cent instead of 99.88 per cent as heretofore. The committee also approved for advancement to standard revisions in the Specifications for Sheet High Brass. The specifications as revised will cover two grades of sheet brass instead of one as formerly and two additional tempers have been added, three-quarter hard and extra spring.

In the Tentative Specifications for Copper Water Tube, slight changes were made in the wall thicknesses of certain diameters. The three wall thicknesses of tubing covered by the specifications will now be designated as classes K, L and M instead of Classes A, B and C as heretofore. These specifications which cover seamless copper tubes especially designed for plumbing purposes, underground water services, copper-coil water heaters, fuel oil lines, gas lines, etc. are being considered for advancement to standard, as are also the Tentative Specifications for Seamless Copper Tubing, Bright Annealed.

(Continued on Page 10)

Tentative Standards Approved for Publication

On the recommendation of the respective standing committees involved, Committee E-10 on Standards has approved for publication two new tentative standards and two revised tentative standards. Copies of these tentative standards will shortly be available. Members can obtain a copy of each by returning the coupon below. The list follows:

Tentative Method of Test for Knock Characteristics of Motor Fuels (D 357 – 33 T);
Tentative Standard Grain Size Chart for Classification of Steels (E 19 – 33 T);
Revised Tentative Methods of Chemical Analysis of Metallic Materials for Electrical Heating (B 71 – 33 T);
Revised Tentative Specifications for Concrete Building Brick (C 55 – 33 T).

The Tentative Method of Test for Knock Characteristics of Motor Fuels was submitted by A.S.T.M. Committee D-2 on Petroleum Products and Lubricants. This method, known as the C.F.R. Motor Method, is based on the apparatus and procedure developed by the Cooperative Fuel Research Committee composed of representatives of the American Petroleum Institute, National Automobile Chamber of Commerce, Society of Automotive Engineers and the U. S. Bureau of Standards who have been studying this problem since 1928. The method is intended for determining the knock characteristics in terms of an arbitrary scale of octane numbers of gasolines and equivalent fuels for use in spark-ignition engines other than engines for aircraft. The anti-knock quality of gasoline has for years been one of its most important properties. The use of the term "octane number" in knock ratings has become standard. However, even the octane number of one gasoline might be reported differently by two laboratories which did not use similar procedure or equipment in determining octane numbers. This has been the cause of many disagreements. Hence, there has arisen the demand for a standard method.

After a tentative procedure was adopted, steps were taken to compare knock ratings obtained by the method with road tests. As a result of a series of cooperative tests, changes were proposed in the C.F.R. Research Method in order to bring laboratory knock ratings in line with average knock values in cars. By the new method, most motor fuels are given a somewhat lower octane number than by the old one, the difference being due largely to operating at a higher engine speed.

The Tentative Standard Grain Size Chart for Classification of Steels (E 19 – 33 T) is a new one submitted by Committee E-4 on Metallography. The need of grain size determinations for S.A.E. and allied steels has been quite generally recognized. Many laboratories are making these tests and as a result different grain size classifications have been in use with resulting confusion in the discussion of grain size. The new tentative standard is the result of laboratory experience extending over a period of ten years, and a proposed standard has been in the hands of the committee for about two years.

The revised Tentative Methods of Chemical Analysis of Metallic Materials for Electrical Heating (B 71 – 33 T) were submitted by Committee B-4 on Electrical-Heating, Electrical-Resistance and Electric-Furnace Alloys. The changes consist principally of a different method of solution, which in general provides at least as good accuracy as was previously obtained and the tests are more readily made and in a shorter time.

The revised Tentative Specifications for Concrete Building Brick (C 55 – 33 T) were submitted by A.S.T.M. Committee C-3 on Brick. The changes have been made chiefly to bring the specifications in line with existing A.S.T.M. specifications for building brick made from clay or shale and for sand-lime building brick. Strength requirements for Grade B brick have been raised from 2250 to 2500 lb. per sq. in. and the minimum requirement has been raised from 1500 to 2000 lb. per sq. in. With these and other minor modifications, the A.S.T.M. specifications for the three types of brick will be practically identical as to physical properties and test requirements.

Committee on Cement Adopts Subcommittee Reorganization Plan

One of the important items of business transacted at the recent meeting of A.S.T.M. Committee C-1 on Cement in New York City was the adoption of a committee reorganization plan intended to facilitate the work of subcommittees engaged in studying the various problems relating to cement. Briefly this involves the appointment of a number of sponsoring committees consisting of four members each to have charge of the various cement specifications now in use. Other sponsoring committees may be appointed as found advisable. Working committees of three members each are provided to work on the problems assigned to them. The appointment and supervision of these small committees will be carried out by the Executive Committee of Committee C-1 and each of the groups will report to the Executive Committee.

Some of the working committees have been already appointed. In the meantime, some of the previously existing sections which have been actively engaged in studying their assigned problems are continuing their work until such time as further appointment of new committees may affect their activity.

Methods for determining fineness of cement were discussed at considerable length at the meeting. The subsieve fineness which is an important factor in the study of the product has now become a requirement in one important tentative specification. A member of the staff of the Cement Reference Laboratory discussed the new turbidimeter method now being developed for the purpose of rapidly determining the specific surface and fineness gradation of cement and an actual demonstration was made. A study is yet to be made of the variables and possible improvements, but the method appears to be well suited for very rapid control tests.

American Society for Testing Materials
1315 Spruce Street
Philadelphia, Pa.

Gentlemen:

Kindly send me a copy of the new tentative standards checked below.

☐ Method of Test for Knock Characteristics of Motor Fuels (D 357 – 33 T);
☐ Grain Size Chart for Classification of Steels (E 19 – 33 T);
☐ Methods of Chemical Analysis of Metallic Materials for Electrical Heating (B 71 – 33 T);
☐ Specifications for Concrete Building Brick (C 55 – 33 T).

NAME .....
(Member)

ADDRESS .....

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Research Committee on Effect of Temperature on Metals.—Two tentative test codes, one covering short-time high-temperature tension tests, the other, long-time high-temperature tension tests were reviewed in minute detail by the Joint A.S.M.E.-A.S.T.M. Research Committee and approved at its meeting, subject to confirming letter ballot vote, for submission to the sponsor societies.

A series of tests in accordance with the proposed method for short-time high-temperature tension tests have been carried out by one of the subcommittees and will be included in the annual report.

Progress was made in arranging for cooperation with the Refinery Division of the American Petroleum Institute and the Association of American Steel Manufacturers. A committee was formed, subject to approval by the joint committee at its next meeting, to be known as Committee V, Special Committee on Oil Refinery Problems (A.P.I. and A.A.S.M. cooperating).

Reports of progress were received on the sponsored researches on endurance, creep and structural stability of the austenitic nickel-chromium steels at high temperatures under way at the University of Illinois and Battelle Memorial Institute. A report on this work is expected sometime during the year.

Committee E-4 on Metallography.—Committee E-4 voted to recommend the advancement to standard of the Tentative Recommended Practice for Thermal Analysis of Steel.

A subgroup of Subcommittee I on Selection and Preparation of Samples has made considerable progress in the development of revised methods of metallographic testing covering iron and steel and the non-ferrous metals. When this group finishes its work, it is expected that it will be possible to present a single method which will cover the general procedure common to both ferrous and non-ferrous metals and alloys and to provide separate sections on special methods for different types of alloys.

Committee E-4 has for some time given considerable attention to the preparation of grain size charts for the ferrous and non-ferrous metals. The Tentative Standard Grain Size Chart for Classification of Steels, recently accepted by the Committee on Standards, is the result of this work. The committee has been giving consideration to a program for further work on methods of preparation and etching of steels other than those of the S.A.E. and allied types.

Committee C-5 on Fire Tests of Materials and Construction.—A recommendation that the Tentative Specifications for Fire Tests of Building Construction and Materials (C 19 – 26 T) be adopted as standard was accepted by Committee C-5 subject to approval by letter ballot before submission to the Society. Requests and desires expressed recently that these test methods be advanced to standard have prompted the committee to take this action. The committee has also approved several minor revisions in the methods, chiefly of an editorial nature, which will clarify the text. Since their publication as tentative by the Society in 1926, they have been used for guidance in conducting fire tests on a variety of materials and subjects which lie within their scope.

Committee C-9 on Concrete and Concrete Aggregates.—Committee C-9 approved for submission to letter ballot proposed specifications for ready-mixed concrete. These specifications were announced and discussed at a recent meeting of the National Ready-Mixed Concrete Association, when Mr. R. B. Young, chairman of Subcommittee XVIII of Committee C-9 which is responsible for the specifications, presented a technical paper outlining the specifications in detail. These specifications have been given considerable study and many helpful comments have been received. Following approval by letter ballot vote, the specifications will be submitted to the Society in June with the recommendation that they be approved for publication as tentative.

The committee also took action to refer to the committee vote proposed specifications for light-weight aggregate as well as methods of test for absorption by aggregates and proposed method of field test for the absorption of mixing water by aggregates. The proposed methods of test for absorption by aggregates are intended for use in making laboratory determinations of absorption by fine or coarse aggregates. The method of field test for absorption of mixing water by aggregates is for use in making approximate field determinations of the water required to compensate for absorption of mixing water by unsaturated fine or coarse aggregates.

A report on Significance of Tests for Characteristics of Concrete and Concrete aggregates was extensively discussed at this meeting. Such topics as compression, tension and transverse strengths; elastic property; durability; workability; volume changes and uniformity of concrete will be discussed. The discussion on aggregates will cover gradation and specific gravity; deleterious substances; soundness; free moisture and absorption; strength; resistance to abrasion and strength of mortar.

Committee C-10 on Hollow Masonry Building Units.—Action was taken by Committee C-10 to propose several important changes in the several standard specifications covering structural clay tile. These revisions relate to the classification of structural clay tile, and if approved by letter ballot, will eliminate the old designations of "Hard, Medium and Soft" classification, which are considered misleading in that they give a wrong impression of the quality of the ware under each classification. The product will be re-classified on the same basis of absorption limits as now used, except that the "Hard and Medium" grades with absorption limits of from 6 per cent to 16 per cent will be known as 6 – 16, instead of "Hard and Medium." The grade now known as "Soft" will be known as 16 – 25. The first and second numbers in these designations represent the minimum and maximum absorption limits, respectively, of the classifications.

Revisions in the methods of specifying standard weights of structural clay tile units were also considered. The committee voted to delete the tables of standard dimensions and weights of units and to substitute therefor limitations on the weights per unit of area and minimum number of cells in thickness. If approved by letter ballot of the committee, the amendments will be presented for publication as tentative at the annual meeting in June.

Committee D-2 on Petroleum Products and Lubricants.—This committee sponsored the technical program for the Regional Meeting, described on page 5 of this BULLETIN, which consisted of a Symposium on Motor Lubricants in which the Metropolitan Section of the Society of Automotive Engineers cooperated.

Five of the tentative methods of test developed by the committee are believed to be ready for advancement to standard. These include the method of test for precipitation number of lubricating oils, test for distillation of crude petroleum, test for dilution of crankcase oils, test for gravity of petroleum and petroleum products by means of the hydrometer, and methods of sampling petroleum and petroleum products.

Tentative revisions in the following standards, published during the year for criticisms, will be proposed for adoption: Methods of test for viscosity of petroleum products and lubricants, test for flash and fire points by means of open cup, and test for cloud and pour points.

Action was taken to recommend the revision of the Standard Methods of Test for Sulfur in Petroleum Oils Heavier than Illuminating Oil. These revisions in general improve the accuracy of the test methods. Revisions in the Tentative Methods of Test for Penetration of Greases and Petrolatum were also approved.

Technical Committee C on Fuel Oils has been very active and progress was reported on the preparation of specifications for fuel oils. It is expected that proposed specifications will be available for consideration at the June meeting of Committee D-2. In its work, Technical Committee C is giving consideration to the commercial standard for domestic and industrial fuel oils.

Acting upon the recommendation of Committee D-2, the Method of Test for Knock Characteristics of Motor Fuels, referred to elsewhere in this BULLETIN, was accepted for publication as a tentative standard by the Committee on Standards.

Committee D-4 on Road and Paving Materials.—Specifications for portland-cement concrete for pavements have been completed by the committee and were approved for submission to letter ballot preparatory to their being recommended to the Society at its annual meeting in June for publication as tentative.

The specifications for calcium chloride, which originally covered material for application to the surface of highways as a dust preventive, are being revised in order to enlarge the scope of the specifications to cover calcium chloride for a number of other purposes including its use in curing and acceleration of concrete and other applications in concrete construction.

Revisions intended to define more closely the methods and testing procedure of the Tentative Methods of Testing Bituminous Emulsions, the Standard Method of Test for Loss on Heating of Oil and Asphaltic Compounds and the Standard Test for Abrasion of Rock were approved by the committee for submission to letter ballot.

Committee D-8 on Bituminous Waterproofing and Roofing Materials.—The committee has completed the preparation of specifications for asphalt cap sheets surfaced with mineral granules which cover cap sheets used in roofing construction for the overlapping of eaves and corners of roofs. The committee has also approved revisions in three of its standard specifications covering asphalt roll-roofing and shingles and in the tentative methods of testing these materials.

The Subcommittee on Accelerated Weathering Tests has made excellent progress in its studies of accelerated methods for testing roofing materials and has prepared a suggested testing procedure which will be published in the annual report of the committee as information. In connection with the studies of the accelerated test methods, which work has been carried on at the U. S. Bureau of Standards, consideration has been given to the lamp used in the test. As a first step toward uniformity in the lamps used in the accelerated weathering tests the committee has prepared a description and study of measurements of the lamp made during the year. This work will be included with the annual report of the committee.

An investigation of testing methods for bituminous emulsions used for waterproofing has been carried on by another subcommittee. It is expected that these studies will result in the development of standard test methods.

The Subcommittee on Bituminous Joint Compounds for Sewer Pipe has been active and has been particularly concerned with research on methods of testing bituminous joint compounds. This work is being carried on at the University of Illinois.

Sections of Committee E-1 on Methods of Testing.—The tension section has been actively at work on the preparation of standardized tension methods of testing procedure for metallic materials. The tentative methods developed by the section, which were completely revised last year, have been well received and are considered by the section to be suitable for advancement to standard in their present form. The methods referred to include descriptions of apparatus and standard test specimens for tension tests of steel and nonferrous metals in the form of plate, sheet, flat wire, shape and flat material, strip, pipe and tubing.

A description of the detailed procedure for determining "yield strength" is also included in the methods. The methods include definitions of various properties determined in tension testing, including in addition to "yield strength," the more familiar "yield point," "elastic limit," "proportional limit" and "tensile strength." It is hoped that the use of these standardized methods and definitions will eliminate the confusion which sometimes has resulted, due to incorrect conceptions of the various properties of materials as determined in connection with the tension test. The committee is now devoting its attention to a consideration of tension testing procedures for non-metallic materials.

The Section on Thin Sheet Metals has been giving consideration to other tests which are made on sheet metals, such as drawing and bending. The committee is now actively at work in correlating data on these and other methods for testing sheet metals. As soon as sufficient information and data have been collected on the various tests under consideration, standards concerning these tests will be developed.

The Section on Impact Testing gave consideration to a preliminary draft of proposed apparatus and testing procedure for impact testing of metals. The proposed methods, based on information collected by the committee over the past eight years, cover the simple beam method (Charpy type) and the cantilever beam method (Izod type). Both types of testing apparatus, the methods of their calibration and a proposed procedure for conducting the impact test were covered in detail.

It was agreed to obtain further data concerning the several types of apparatus and to prepare a further draft of the methods based on this information and the constructive suggestions resulting from the detailed review by the committee. It is also planned to study the proposed method, when revised, by a series of tests in the cooperating laboratories of the members.

An analysis of the replies received to a questionnaire on impact testing was also considered by the committee. The questionnaire, which had been distributed to a list of representative industries having an interest in this type of test, was designed to reveal the present approved uses of the impact test and the needs of industry with respect to this test. Replies received from 43 concerns out of a total of 68 indicated almost unanimous agreement in urging standardization of test specimens for both the Charpy and Izod methods and the development of methods of impact testing. A demand for standardization of a round impact specimen and for a method of calibration was also shown.

Presentation of Data.—The Committee on Interpretation and Presentation of Data of Committee E-1 on Methods of Testing received a report of its Manual Committee and discussed plans for its meeting in June.

The first section of the proposed Manual will deal with the condensation of data and the ability of functions (or statistics) to present the essential information contained in the original observations and will contain recommendations on methods of presenting data. This problem includes the planning of investigations, accumulation of data, its presentation and interpretation.

By arranging for the presentation of papers on phases of the question, the committee has stressed to the members of the Society and others interested in materials, the importance of statistical methods.

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The families of many members are undoubtedly planning to visit the Century of Progress Fair in Chicago during the summer. The greatly reduced railroad fares which members of the Society will be granted for Engineering Week, June 26-30, may also be applied to family transportation. The special hotel rates are also an inducement to visit Chicago during Engineering Week.

Personals

News items concerning the activities of our members will be welcomed for inclusion in this column.

HERBERT J. BAKER is now Chief Inspection Engineer, Golden Gate Bridge and Highway District, New York City.

LEO A. BAUER who was Chief Inspector, American Airplane Corp., Farmingdale, Long Island, is now Airplane Inspector at Curtiss Wright Corp., Robertson, Mo.

F. M. BECKET, Vice-President of the Union Carbon and Carbide Corp., was elected President and Director of the American Institute of Mining and Metallurgical Engineers. Other members of the Society honored include T. S. FULLER, Metallurgist, Research Laboratory, General Electric Co., who was chosen Chairman of the Institute of Metals Division; J. L. CHRISTIE, Metallurgist, Bridgeport Brass Co., and W. A. SCHEUCH, Works Manager, Nassau Smelting and Refining Co., Inc., were chosen Vice-Chairmen of this Division and JEROME STRAUSS, Chief Research Engineer, Vanadium Corp. of America, D. K. CRAMPTON, Metallurgist, Chase Brass and Copper Co., and H. A. BEDWORTH, Superintendent of Service Engineering, American Brass Co., were chosen members of the Division Executive Committee. W. M. CORSE, Metallurgical Engineer, Washington, D. C., who has served the division as secretary-treasurer for many years will continue to act as treasurer.

H. E. BISHOP, formerly Assistant to the President, John Dunlop's Sons, Inc., New York City, is now President of the Galeton Silk Throwing Co., Galeton, Pa.

R. T. COGHLAN, formerly with the Marquette Cement Manufacturing Co., is now Consulting Engineer for Kosmos Portland Cement Co., Kosmosdale, Ky.

MAX HECHT, formerly Chief Chemist, Duquesne Light Co., is now consulting engineer specializing in power stations chemistry at 5859 Northumberland St., Pittsburgh, Pa.

A. N. JOHNSON, Dean of the College of Engineering, University of Maryland, was presented the George S. Bartlett award of the Highway Research Board, the American Association of State Highway Officials and the American Road Builders' Association at the recent banquet of the Highway and Building Congress in Detroit. The award is given each year in recognition of outstanding highway service.

E. L. LASIER is now connected with the Titanium Alloy Manufacturing Co., Niagara Falls, N. Y.

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New York Regional Meeting

(Concluded from Page 5)

The inadequacy of sieves in determining particle size distribution in portland cement and air separating and sedimentation devices which are applicable to the measurement of sub-sieve range were discussed. Comparative results obtained on the same samples of cement by different laboratories using different methods were presented.

Of particular interest to the construction engineer was the discussion on the importance of particle size measurement of hydraulic fill dam materials. A recently completed project near Westfield, Mass., demanded careful control of the size of the core material to give maximum rigidity and minimum percolation. Relation between void content and permeability of the core material was brought out. The exacting requirements of particle size which are met in the abrasive field were emphasized. Standardizing sieve cloth and accurate sedimentation testing were discussed.

Much of the credit for the success of the Regional Meeting is due the New York District Committee which acted as a general committee on arrangements. The complete personnel of the committee is as follows:

F. M. Farmer (Chairman)

D. A. Abrams	W. F. Davidson
R. L. Bertin	Prévost Hubbard
E. D. Boyer	K. G. Mackenzie
A. F. Braid	P. D. Merica
F. G. Breyer	C. S. Reeve
Cloyd M. Chapman	T. S. Taylor

New Members to March 21, 1933

The following 31 members were elected from January 23 to March 21, 1933:

Company Members (5)

Anaconda Wire and Cable Co., T. S. Johnson, Assistant General Manager, Hastings-on-Hudson, N. Y.

I. C. I. Metals, Ltd., Kynoch Works, Intelligence Dept., Witton, Birmingham, England.

Phoenix Chemical Laboratory, Inc., J. Krawetz, President, 3953 Castello Ave., Chicago, Ill.

Shell-Mex Argentina, Ltd., C. B. Don Fox, General Manager, Bartolomé Mitre 430, Buenos Aires, Argentina.

Timken Steel and Tube Co., The, H. C. Weirick, Inspection Engineer, Canton, Ohio.

Individual and Other Members (26)

Austin, H. E., Assistant General Manager, American Creosoting Co., 401 W. Main St., Louisville, Ky.

Betterton, J. O., General Manager, Lead Refineries, American Smelting and Refining Co., 120 Broadway, New York City. For mail: 14 Home St., Metuchen, N. J.

Born, Sidney, Director, Department of Petroleum Research, University of Tulsa, Tulsa, Okla. For mail: 252 E. Twenty-seventh Place.

Davis, Harold S., Divisional Leader, Research and Development Labs., Socony-Vacuum Corp., Paulsboro, N. J.

Falck, Giovanni, Doctor of Engineering, Acciaierie e Ferriere Lombarde Falck, Via Gabrio Casati 1, Milan, Italy.

Faries, Robert, Assistant Chief Engineer-Maintenance, The Pennsylvania Railroad Co., 1658 Broad St. Station Bldg., Philadelphia, Pa.

Guy, T. W., Consulting Engr., Kanawha Valley Bldg., Charleston, W. Va.

Hoffman, E. A., General Superintendent, The Wilkes-Barre Railway Corp., Box 443, Wilkes-Barre, Pa.

Kingsbury, L. W., Metallurgist, The Standard Stoker Co., Inc., Erie, Pa. For mail: 1216 W. Twenty-sixth St., Erie, Pa.

Kundinger, R. A., Technical Superintendent, Dominion Tire Factory, Dominion Rubber Co., Ltd., 149 Strange St., Kitchener, Ont., Canada.

Kurihara, Kanshi, Superintendent, The Central Laboratory, South Manchuria Railway Co., Fushimi-Dai, Dairen, Manchuria.

Lee, William, Technical Director, Silvertown Lubricants, Ltd., Minoco Wharf, West Silvertown, London, E. 16, England.

Levin, Sam, Wood Door Manufacturer, 551 Fifth Ave., New York City.

Lockwood, J. E., Consulting Engr. on Naval Stores, 715 Liberty National Bank Bldg., Savannah, Ga.

McGinity, J. T., Chief Mechanical Draftsman, The Delaware & Hudson Railroad Corp., Albany, N. Y.

Michigan State College Library, East Lansing, Mich.

Miller, Durando, Vice-President, Blue Diamond Service Corp., 221 E. 129th St., New York City.

New York State College of Ceramics, M. E. Holmes, Dean, Alfred, N. Y.

Newton, R. C., Chief Chemist, Chemical Lab., Swift and Co., U. S. Yards, Chicago, Ill.

Phillips, Garnet, Metallurgist, Frank Foundries Corp., Moline, Ill.

Pritchard, H. S., Chief Chemist, Dunlop Tire and Rubber Goods Co., Ltd., 870 Queen St. E., Toronto, Ont., Canada.

Quebec Provincial Highway Dept., Alphonse Paradis, Chief Engr., Parliament Bldg., Quebec. P. Q., Canada.

Riddington, F. W., Resident Engr., Edison General Electric Appliance Co., Inc., Ontario, Calif.

Secor, A. C., Plant Superintendent, The Standard Stoker Co., Inc., Erie, Pa. For mail: 133 E. Thirty-fifth St.

Stead, L. A., Chief Chemist, Aberfoyle Manufacturing Co., Chester, Pa.

Vize, P. T., Jr., Assistant Purchasing Agent, The United Electric Light and Power Co., 4 Irving Place, New York City.

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Edition of Petroleum Products Book Exhausted

Despite the fact that the 1932 edition of the book on Petroleum Products and Lubricants was greater than for any previous year, it is already exhausted. There has been a very heavy demand for this publication which includes the 1932 Report of A.S.T.M. Committee D-2 and the methods of test relating to petroleum products. A new edition of this book will be published during the summer. Meanwhile, those who are desirous of obtaining copies of the methods of test given in the publication, can obtain these separately.

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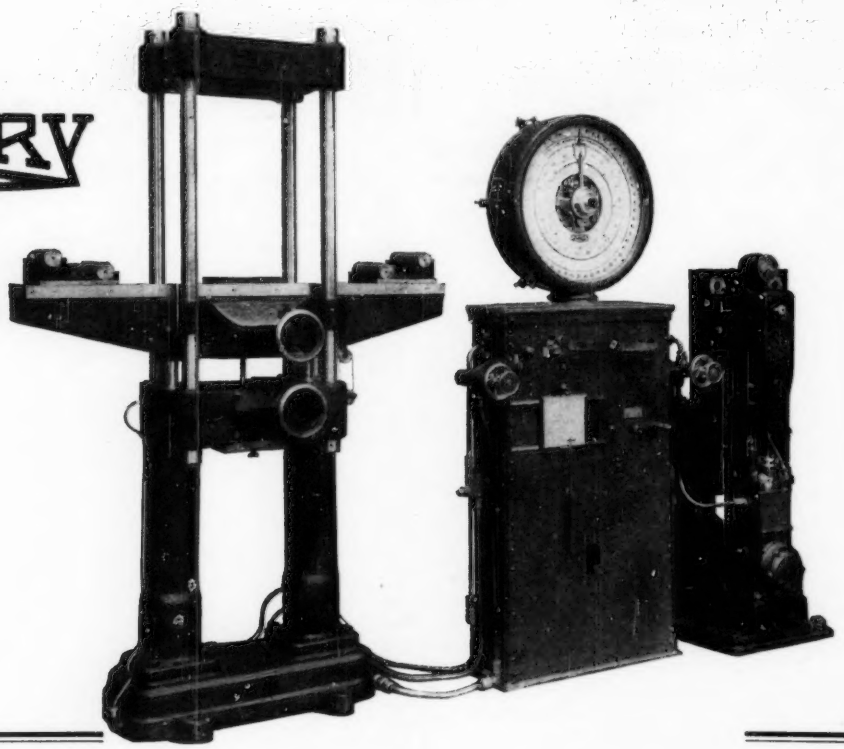

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